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| EXAMINER |
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WOLLSCHLAGER, JEFFREY MICHAEL

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| ART UNIT | PAPER NUMBER |
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1742

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| NOTIFICATION DATE | DELIVERY MODE |
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08/22/2011

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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| | | | |
|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 10/562,047 | Applicant(s) ESTUR ET AL. | |
| | Examiner JEFF WOLLSCHLAGER | Art Unit 1742 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 15-19, 21, 22, 24, 25 and 29-33 is/are pending in the application.
- 5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 15-19, 21, 22, 24, 25 and 29-33 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

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DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 8, 2011 has been entered.

Response to Amendment

Applicant's amendment to the claims filed August 8, 2011 has been entered. Claim 15 is currently amended. Claims 1-14, 20, 23, 26-28 and 34-37 have been canceled. Claims 15-19, 21, 22, 24, 25 and 29-33 are pending and under examination.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 15, 17, 21, 22, 24, 25 and 29-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamai et al. (US 3,655,542) in view of Minami et al. (US 3,709,806) and either one of Cates et al. (US 5,284,433) or Bruckmann et al. (US 5,059,103).

Regarding claims 15, 17, 21, 22, 24, 25 and 29-33, Tamai et al. teach and suggest the basic claimed process of processing a cellular particle comprising a partially foamed thermoplastic resin, such as a polyamide, having substantially no surface pores (i.e. continuous skin) comprising extruding a polyamide composition containing an expanding agent to effect expansion thereof and cooling and chopping the material with a rotating blade to produce a particle having a specific gravity as low as 10 percent of the initial resin itself and a particle volume as low as 0.01 cc (Abstract; col. 1, lines 6-14; col. 2, lines 1-16 and 39-42; col. 3, lines 37-65; col. 5, lines 69-71; col. 6, lines 51-73; col. 7, lines 21-73). Further, Tamai et al. teach and suggest that the material can be "immediately" cut/cut at the die outlet by a "rotating blade" (col. 7, lines 60-73; col. 9, lines 20-24), thereby suggesting/implying the claimed cooling and chopping steps to the ordinarily skilled artisan, but do not necessarily articulate such a configuration explicitly or that the particles are spherical.

However, Minami et al. teach an analogous process of producing expanded, spherical pearls/particles (col. 3, lines 25-42) comprising extruding resin and a blowing agent (Abstract) into hot water and chopping the particle in the hot water (col. 3, lines 25-42). The hot water cools the material and the particles have a diameter of about 0.1 to 6 mm and a skin layer (col. 5, line 42-col. 6, line 45). The die plate was washed with water and immediately while still relatively hot the particles were cut with a rotary blade (col. 8, lines 34-56).

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Further, each of Cates et al. (Abstract; Figure 1; col. 1, lines 16-31; col. 3, lines 60-63; col. 5, lines 25-30) and Bruckmann et al. (Abstract; Figure 1) demonstrate how such an immediate/rotating blade cutting arrangement would be understood to be employed in the analogous art.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have combined the teaching of Tamai et al. with the teaching of Minami et al. and to have produced a spherical particle as suggested by Minami et al., while practicing the method of Tamai et al., for the purpose of producing a particle having an art recognized suitable shape.

Further, it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Tamai et al. and to have employed the cutting configuration set forth by either one of Cates et al. or Bruckmann et al. and to have chopped the material at the die outlet for the purpose, as suggested by Tamai et al. (col. 7, lines 60-73; col. 9, lines 20-24) of cutting the material with a rotary blade in an art recognized suitable manner.

Claims 16, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamai et al. (US 3,655,542) in view of Minami et al. (US 3,709,806) and either one of Cates et al. (US 5,284,433) or Bruckmann et al. (US 5,059,103), as applied to claims 15, 17, 21, 22, 24, 25 and 29-33 above, and further in view of Amano et al. (US 5,234,640).

As to claims 16, 18 and 19, the combination teaches the method of claim 15 as set forth above. Tamai et al. do not teach utilizing the blowing agents of claims 16, 18 and 19 as set forth in the instant disclosure.

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. However, Amano et al. teach a method of producing foamed thermoplastic materials wherein they disclose that aromatic polycarbonate is known to be a blowing agent and further suggest that a variety of equivalent alternative blowing agents such as azodicarbonamide, nitrogen, carbon dioxide, and hydrocarbons are known to be effective for producing foamed materials (col. 4, lines 11-30).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Tamai et al. and to have employed other blowing agents, such as the blowing agents suggested by Amano et al., since Amano et al. suggest equivalent alternative blowing agents are known in the art to be suitable for forming a foamed product (MPEP 2144.06-2144.07). One having ordinary skill would have had a reasonable expectation of success when attempting to utilize other art recognized blowing agents.

Claims 15-19, 21, 22, 24, 25, and 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pottenger (US 3,089,857) in view of Minami et al. (US 3,709,806) and any one of Cates et al. (US 5,284,433) or Bruckmann et al. (US 5,059,103) or Chszaniecki (US 6,592,350).

Regarding claims 15-19, 21, 22, 24, 25 and 29-31, Pottenger teaches a process for producing expandable polymeric particles, including nylon particles (col. 7, lines 45-57), containing a blowing agent comprising extruding the composition and cooling with a liquid and chopping the particles (col. 2, lines 27-55). Pottenger teaches the material can be quenched in any convenient manner (col. 4, lines 43-47), thus making clear the invention is not limited to the configuration shown in the Figure, and that "substantial" expansion is avoided (col. 4, lines 43-47). It is noted that claim 15 does not require very much expansion in order to meet the scope

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of the term as utilized in the claim (for example see claim 25). It is further noted that neither claim 32 nor claim 33 are rejected in view of the combination. Pottenger do not teach the particles/beads are spherical or that cooling and chopping take place at the die outlet.

However, Minami et al. teach an analogous process of producing expanded, spherical pearls/particles (col. 3, lines 25-42) comprising extruding resin and a blowing agent (Abstract) into hot water and chopping the particle in the hot water (col. 3, lines 25-42). The hot water cools the material and the particles have a diameter of about 0.1 to 6 mm and a skin layer (col. 5, line 42-col. 6, line 45). The die plate was washed with water and immediately while still relatively hot the particles were cut with a rotary blade (col. 8, lines 34-56).

Further, each of Cates et al. (Abstract; Figure 1; col. 1, lines 16-31; col. 3, lines 60-63; col. 5, lines 25-30) and Bruckmann et al. (Abstract; Figure 1) and Chszaniecki (Abstract; Figure 1; col. 2, lines 21-col. 3, line 35) demonstrate a cutting and cooling arrangement at the die outlet.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have combined the teaching of Pottenger with the teaching of Minami et al. and to have produced a spherical particle as suggested by Minami et al., while practicing the method of Pottenger et al., for the purpose of producing a particle having an art recognized suitable shape.

Further, it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Pottenger and to have employed the cutting configuration set forth by any one of Cates et al. or Bruckmann et al. of Chszaniecki and to have chopped the material at the die outlet for the purpose, as suggested of cutting and cooling the material in an art recognized suitable manner or for the purpose, as suggested by Chszaniecki, of reducing the complexity of the process (col. 2, lines 21-34) and for

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the purpose of exposing the nylon/polyamide to water for a shorter amount of time (col. 3, lines 15-21).

It is noted that this rejection based upon Pottenger et al. can be overcome by incorporating the subject matter of either claim 32 or claim 33 into claim 15.

Response to Arguments

Applicant's arguments filed August 8, 2011 have been fully considered, but are moot in view of the new grounds of rejection necessitated by the amendment

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFF WOLLSCHLAGER whose telephone number is (571)272-8937. The examiner can normally be reached on Monday - Thursday 6:45 - 4:15, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Jeff Wollschlager/
Primary Examiner
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August 17, 2011